

941,126.

Fig. 2

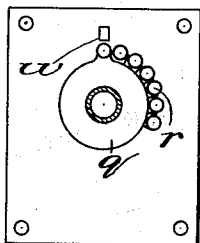


Fig. 3.

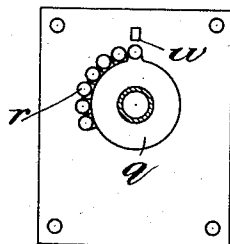
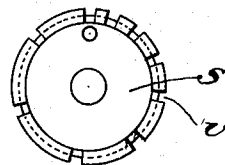


Fig. 4.



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ROLLER-BLIND FOR PHOTOGRAPHIC CAMERAS.

941,126.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed January 28, 1907. Serial No. 354,567.

To all whom it may concern:

Be it known that I, ERNST BRAUBURGER, a citizen of the German Empire, and resident of Friedenau, near Berlin, Germany, have invented certain new and useful Improvements in and Relating to Roller-Blinds for Photographic Cameras, of which the following is a specification.

My invention relates to improvements in roller-blinds for photographic cameras described in the specification of Letters Patent No. 833,916, the purpose of the invention being to provide means for stopping the movement of one or both curtains, without the use of toothed wheels or mechanism occupying a considerable amount of space.

In the construction set forth in the prior specification referred to the movement of the curtains for the purpose of forming the aperture is stopped by abutments co-acting with the curtain-rollers. For this purpose the rollers are provided with pinions meshing with toothed wheels having abutments adapted to co-act with corresponding fixed abutments. This arrangement involves, as stated, the use of toothed gear and occupies a comparatively large amount of space if the curtains are of considerable length or the rollers are of small diameter. In the improved construction which will now be described these disadvantages are obviated by using clutches placed between a fixed abutment and a roller-axle these clutches having a certain amount of free or idle movement. Preferably these clutches consist of concentric disks provided with abutments and adapted to be rotated relatively to each other until their abutments come into contact with each other. The amount of rotation which can be imparted to the roller before its movement is stopped, depends on the number of disks placed between the roller and the fixed abutment. The extent of the rotation can therefore be regulated by regulating the number of clutch-disks used. A similar arrangement of clutches having a certain amount of idle movement may be used for conveniently regulating the rotation of the roller which continues to move, in order to form the aperture, when the first roller has been stopped. This arrangement does not interfere with the closing of the aperture after the exposure so that during the rolling up of the curtains the aperture is closed. The clutch-disks for stop-

ping the rotation of the two rollers are preferably co-axial.

The invention is illustrated in the annexed drawing, in which—

Figure 1 is a front view of the curtains and winding mechanism part of the latter being shown in section. Figs. 2 and 3 are side-views of the clutches, showing the disks in their two end-positions. Fig. 4 is a side-view of the device by means of which the width of the aperture is regulated.

The curtains are marked *a* and *b* respectively, *c* being the roller of the curtain *a*, and *d* *d* the rollers of the curtain *b*. The spring-rollers actuating the two curtains are marked *e* and *f* respectively. As in the construction illustrated in the specification of Letters Patent No. 833,916, the rollers *d* are co-axial with the roller *c* and are mounted loosely on the journals *g* of the latter. On the said journals *g* are placed friction-disks *h*, the inner surfaces of which bear against the said roller. The disks *h* have recesses *k* within which are placed clutch-rollers *l*.

The constructional features so far described with reference to the drawings are entirely analogous to corresponding elements of the construction described in the prior specification already referred to.

On the journals *g* are mounted clutch-disks *m*, each of which is provided with an abutment *n*. These disks serve to limit the rotation of the rollers *d* during the rolling up of the curtains. For this purpose each roller *d* is provided with an abutment *o*, and an abutment *p* is fixed to each side-wall of the casing. On the left-hand journal *g* there are arranged, in addition to the disks *m*, disks *q* provided with abutments *r*.

s is the disk for adjusting the width of the aperture. The abutment of the clutch-disk adjacent this adjusting-disk projects into a hole with which the latter is provided, so that rotation of the adjusting-disk causes the said clutch-disk to rotate.

A disk *t* fixed to the journal *g* is provided with an abutment *u*, and a box fixed to the adjusting disk *s* is provided with notches *v* adapted to be engaged by an abutment *w* fixed to the case for the purpose of adjusting the disk *s* in different positions. A spring *x* allows of axially displacing the disk *s* for the purpose of altering its adjustment.

y is a catch or pawl lever, adapted to co-act with a ratchet-wheel fixed to the winding-up button z .

The action of the improved shutter-mechanism is as follows: Assuming that the curtains have been unwound from the upper rollers and are to be wound up again preparatory to an exposure with the same width of the aperture, the button z is rotated in the direction for winding up. By this means the rollers c and d are rotated, and also the clutch-disks m and q . The simultaneous rotation of the curtain-rollers continues until the rollers d are stopped by means of the clutch-disks m , and the number of disks m provided is such that the train of abutments between the rollers d and the abutments p interrupts the rotation of the said rollers at the moment at which the curtain b has been wound up as much as is required. During this part of the winding up operation the clutch-disks q are also rotated, but the number of disks q is greater than the number of disks m , so that the disks q permit further rotation of the axle g after the rotation of the rollers d has been stopped. This further rotation of the axle g causes the roller c to continue its rotation alone, overcoming the friction between its surface and the surfaces of the rollers d . The rotation of the roller c continues until stopped by the train of disks q co-acting with the adjusting-disk s and the abutment u . The extent of this rotation, and the width of the aperture formed, depend on the adjustment of the disk s . When an exposure has been caused to take place by operating the lever y , the rollers c and d are rotated in the opposite direction, and rotate the clutch-disks m and q on the journals g , also in the direction opposed to that in which they were rotated for winding up. The curtains are thus after each exposure returned to their original positions.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a photographic shutter the combination with two curtains adapted to be moved as well independently of each other as jointly and adapted to form a slit, of supporting rotatable rollers for said curtains and means adapted to successively interrupt the movement of the two curtains, said curtain movement controlling means comprising at least for one curtain rotatable clutch-members and an abutment, the clutch-members interposi-

tioned between a curtain supporting roller and said abutment and individually capable of idle rotation through certain angles.

2. In a photographic shutter the combination with two curtains adapted to be moved as well independently of each other as jointly and adapted to form a slit of supporting rotatable rollers for said curtains, rotatable clutch-members and abutments, one set of clutch-members interpositioned between each curtain-supporting roller and one of said abutments, the clutch-members of each set individually capable of idle rotation through certain angles.

3. In a photographic shutter the combination with two curtains adapted to be moved as well independently of each other as jointly and adapted to form a slit of supporting rotatable rollers for said curtains, a set of co-axial rotatable clutch-members and an abutment, the clutch-members interpositioned between a curtain-supporting roller and said abutment and individually capable of idle rotation through certain angles.

4. In a photographic shutter the combination with two curtains adapted to be moved as well independently of each other as jointly and adapted to form a slit of supporting rotatable rollers for said curtains, two sets of rotatable clutch-members arranged co-axially to each other and abutments, each set of said clutch-members interpositioned between one of the two curtain-supporting rollers and an abutment and the clutch-members of the two sets individually capable of idle rotation through certain angles.

5. In a photographic shutter the combination with two curtains adapted to be moved as well independently of each other as jointly and adapted to form a slit of supporting rotatable rollers for said curtains and means adapted to successively interrupt the movement of the two curtains, said curtain movement controlling means comprising at least for one curtain rotatable clutch-members and an adjustable abutment, the clutch-members interpositioned between a curtain-supporting roller and said abutment and individually capable of idle rotation through certain angles.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ERNST BRAUBURGER.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.